

The 2010 Scientific Strategic Plan of the Global HIV Vaccine Enterprise: A Roadmap for the Future

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HIV/AIDS is arguably the most significant health challenge facing the world today. The 2008 numbers tell the story: 33.4 million were living with HIV, 2 million people died of AIDS and 2.7 million people were newly infected¹. Despite impressive scientific advances in developing over two dozen drugs to treat HIV infections, there is still no cure. In addition, only about one-third of those who need drugs have access to therapy.

In 2003, recognizing the enormity of the scientific and humanitarian challenge of HIV/AIDS, two-dozen leading investigators and major funding organizations formed the Global HIV Vaccine Enterprise² (the Enterprise), a voluntary alliance of independent organizations committed to working together to accelerate the development of an HIV vaccine.

At the center of the Enterprise vision is a global research agenda, the Scientific Strategic Plan (the Plan), a high level framework that represents the collective perspectives and shared accountability of the Enterprise Council, the Enterprise's senior advisory body to work toward aligning their strategies and activities to help realize a shared vision for the field³. Originally developed in 2005⁴ and updated for 2010, the Plan takes into account the recent advances in HIV vaccine research, as well as the most pressing challenges the field faces today. The development of the 2010 Plan has been informed by discussions of five targeted working groups, and consultations with the scientific community. The 2010 Plan⁵ is accompanied by the reports of the five Working Groups⁶⁻¹⁰, which informed its development.

In the past several years, HIV vaccine research has made significant progress. The 2010 Plan comes almost exactly one year after the landmark results of RV144¹¹ (the Thai trial), the first time a clinical trial has provided proof of concept that a vaccine can reduce risk of HIV acquisition. In addition, there have been important laboratory and computational advances that address the challenge of HIV sequence diversity; elegant new ways of screening for novel, broadly neutralizing antibodies; immunological insights into the mechanisms of viral control in both nonhuman primates and in humans (elite controllers and long term nonprogressors); and a deepening understanding of the pathways to immune protection in preclinical models for HIV/AIDS.

Reflecting these scientific advances, the Plan highlights the need to alter our view of clinical trials in several important ways. Human clinical efficacy trials generate an enormous wealth of biological,

clinical and epidemiological information. Clinical trials should be viewed, therefore, not as the culmination of a series of basic science experiments but rather as an integral part of the discovery process itself. Because the efficacy of a vaccine candidate depends entirely on its ability to elicit protective, durable immune responses against the cognate pathogen, the Plan stresses the need for a thorough description and understanding of the immunological events that underlie these clinical outcomes. As both the five Working Groups and the 2010 Plan emphasize, the next stage of HIV vaccine research requires new tools and new ways of thinking, more trials with shorter turn-around times, bridging the gaps between basic and clinical research, new funders, rapid data sharing, young people, people from other fields and regions of the world most affected by the epidemic, and industry. Realizing the priorities and targets of the 2010 Plan will also continue to rely on the creativity and efforts of individual investigators, as well as the collaborative efforts of multidisciplinary teams from around the world.

We are at an exciting moment in HIV vaccine research, but the end of this road is not yet in sight. The 2010 Plan provides the global framework to move forward as rapidly as possible towards the development of safe and effective HIV vaccines. The challenge now is to transform the ideas and aspirations of the Plan into concrete and tangible action that will drive progress. Increased and new ways of global collaboration, new minds and new ideas, and the expertise and resources of more organizations and countries working together as a global community are essential if we are to reach the targets in the 2010 Plan.

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3. Governance I Global HIV Vaccine Enterprise. at <http://www.vaccineenterprise.org/content/governance#enterprise_council>
4. Coordinating Committee of the Global HIV/AIDS Vaccine Enterprise The Global HIV/AIDS Vaccine Enterprise: Scientific Strategic Plan. *PLoS Med* **2**, e25 (2005).
5. Placeholder for 2010 Plan reference.
6. Placeholder for WG1 Report.
7. Placeholder for WG2 report.
8. Placeholder for WG3 report.
9. Placeholder for WG4 report.
10. Placeholder for WG5 report.
11. Rerks-Ngarm, S. *et al.* Vaccination with ALVAC and AIDSVAX to Prevent HIV-1 Infection in Thailand. *N. Engl. J. Med.* (2009).doi:10.1056/NEJMoa0908492

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